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Fig. 1. Guava trees were cut down along the JS road from Kasiha to Kansyana Research Camp in October, 2007. (Photo: By courtesy of Michio Nakamura).

<FORUM>

Why were guava trees cut down in Mahale Park? The question of exterminating all introduced plants

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I heard that in October 2007 all of the guava trees (*Psidium guajava*) in Mahale Park, from Kasiha to the Kansyana research camp, were cut down by workers of the Frankfurt Zoological Society in collaboration with Tanzania National Park (TANAPA) (Fig. 1). In response to protests by three researchers who were staying there at the time, they stopped cutting of the remaining trees. The reason given for cutting the trees was adherence to the

policy of exterminating all alien trees planted by humans, which, according to TANAPA employees, is stipulated in the General Management Plan¹. Nevertheless, under this plan researchers were also supposed to have been consulted. As a matter of fact, I was consulted only partially and was never given enough opportunity to express my opinion fully. Furthermore, some of my most important opinions regarding ecotourism, such as a single integrated booking system, were not taken up. However, this time, I limit my discussion to the human-introduced trees.

Until the late 1970s, there were seven hamlets at Kasoje along Lake Tanganyika in the current national park area, from the south of Lubulungu to the north of Kasiha. When I arrived at Kasoje in 1965, I saw oil palms, hedgerow such as *Jatropha curcas*, and fruit trees such as mango, lemon, orange, papaya, coffee, and banana. On the other hand, guava trees and *Senna* (ornamental/shade tree) were introduced to Kasoje in the late 1960s after I arrived. After the establishment of the national park in 1985, trees such as banana, coffee and papaya disappeared rather quickly. Other trees such as mango and oil palm thrived but never extended their distribution from the old hamlet sites. Only *Senna* reproduced themselves robustly at the cost of indigenous vegetation, thus becoming notorious alien, invasive plants^{2,3}. What happened with the guava and lemon trees? Casual observers seemed to think that these trees were also invasive trees. But this was never the case. Let me report an interesting story.

Perhaps more than 10 years after the guava and lemon trees around Kansyana grew large and began to bear fruit, some chimpanzees began to eat these alien fruits, and this food habit spread rather quickly^{4,5}. Chimpanzees are seed dispersers. When M group chimpanzees travel, they usually use vegetation-free paths, unless they need to enter the bush to eat, take a rest or avoid tourists. Consequently, there are plenty of opportunities for them to disperse the seeds of cultigens along the paths. When it begins to rain in October, it is nearly the season when our assistants begin to eliminate shrubs, herbs, and grasses growing on the paths. The seeds of cultigens also germinate, and thus these saplings would also be destined for elimination. However, the keen eyes of our Tongwe assistants could easily discriminate the guava and lemon seedlings from those of other plants. They almost “instinctively” avoided removing the seedlings of cultigens because they were, after all, born farmers. Their usual work had been removing weeds and rescuing cultigens. They were also trained to avoid cutting the food plants of chimpanzees.

After several years, I noticed a row of guava trees along the J-Road and Route One, from Kasiha to the Kasiha River, through the Kansyana Research Camp. Immediately, I realized that this was collaborative work by chimpanzees and humans! I left this matter as it was and did not tell our assistants to cut down the guava trees. I made this decision because guava fruit seemed to have become a substantial component of the diet supporting chimp life at that time (Fig. 2). June is a lean season of fruits in many years, and guavas were thus a lucky gift to chimpanzees. Guavas seemed to compensate for the loss of food supply resulting from the invasion of *Senna spectabilis*. Lemon trees were apparently less strong than guava trees in competition with natural vegetation, but similarly they survived along the observation path, thanks to the unconscious human intervention. Lemon trees in the Research Camp were visited by chimpanzees many times, particularly in September 1999, and they appeared to provide one of the most important foods for M group chimpanzees.

We should have no illusion that “the natural land” exists without the presence of humans. On the contrary, human beings and their ancestors have lived with other creatures since the emergence of such life forms on earth.



Fig. 2. Guava fruits are now constituting an important dietary component of M group chimpanzees in the early dry season. (Photo: By courtesy of Michio Nakamura).

For example, if you climb Mt. Nkungwe you can enjoy a beautiful landscape⁶ of wood fern (*Cyathea* sp) and giant trees such as *Parinari*, *Anthonotha* and *Croton*, which appear to be perfectly ancient and pristine. However, if you look carefully enough, you will find pieces of clay pots buried near the highest end of many steep valleys. As a matter of fact, Tongwe people have lived there at least 130 years⁶. Resident people evacuated their traditional land, which they had inherited from their ancestors as their most important treasure, and ceded it to the government. Mango trees and oil palms are evidence of their existence, together with natural monuments such as huge rocks that they believed harbored the guardian spirits. They are the cultural heritage of the Tongwe people.

The Mahale national park should use this cultural heritage as one of the teaching materials and attractions for tourists, as well as the expression of respect and gratitude to the original resident people. Tourists would be thankful to those who had surrendered their land to many other people as a national treasure at the cost of

their village, subsistence base, and memory of ancestral spirits. Moreover, every human having common sense knows that mango trees and oil palms provide good shade, which tourists need in the sunny dry season. The row of guava trees alongside Route One would be an interesting resource for teaching about seed-dispersing activities based on both chimpanzee and human intervention. These trees are alien (although oil palm is of West African origin) but never invasive. It has been discussed that oil palms likely brought yellow baboons to inland park areas and thus robbed chimpanzees of some inland food patches⁷. Accordingly, some of the oil palms, from Kasiha workers' camp to the west of Kansyana, could be cut down, but the other oil palm groves should be kept intact. I also would like to emphasize that the width of observation paths should be less than 1 meter. I was surprised to see that TANAPA temporary workers have sometimes widened the path up to 3 meters, cutting down shrubs and woody vines constituting important dietary components, such as *Psychotria peduncularis* and *Ficus urceolaris*, because they were ignorant of vegetation. Tourist companies welcome wide paths for their convenience, but this comes at the cost of the chimpanzees' subsistence.

Accordingly, my proposal is:

- 1) Mango trees and oil palms should be kept left alone as cultural heritage and shade trees, except for some oil palms heavily used by yellow baboons.
- 2) Lemon and guava trees should also be kept because they are not invasive but instead provide important food to chimpanzees. They should be used as instructive and attractive materials to teach tourists the role of chimpanzees in the maintenance of the Mahale ecosystem.
- 3) *Senna* trees should be cut down. Chain saws should be used not for guava trees but for *Senna*!
- 4) The width of observation paths should be kept to 1 meter at the widest. Workers should be taught which plants growing along the paths are eaten by chimpanzees.
- 5) Researchers should be consulted before important changes in the environment are planned. Information accumulated over 43 years of long-term research should be respected. It was the Research that created the Mahale Mountains National Park⁸. It is regrettable

that the drafters of the General Management Plan did not know about (or neglected?) the one book in English dedicated to the chimpanzees of Mahale⁶.

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